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ROC300 Protocol Emulation Program (for the ROC800-Series Remote Operations Controller) User Manual

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Chapter 1 – Introduction

This chapter describes the structure of this manual and presents an overview of the ROC300 Protocol Emulation program for the ROC800.

1.1 Scope and Organization

This document serves as the user manual for the ROC300 Protocol Emulation program which is intended for use in a ROC800-Series Remote Operations Controller ("ROC800"). This manual describes how to download, install, and configure the ROC300 Protocol Emulation program (referred to as the "ROC300 Protocol program" or "the program" throughout the rest of this manual). You access and configure this program using ROCLINK™ 800 Configuration Software loaded on an IBM-compatible personal computer running Windows® 2000 (with Service Pack 2), XP, or Vista.

The sections in this manual provide information in a sequence appropriate for first-time users. Once you become familiar with the procedures and the software, the manual becomes a reference tool.

This manual has the following major sections:

- *Section 1 – Introduction*
- *Section 2 – Installation*
- *Section 3 – Configuration*
- *Section 4 – Reference*

This manual assumes that you are familiar with the ROC800-Series and their configuration. For more information, refer to the following manuals:

- *ROC809 Remote Operations Controller Instruction Manual* (Form A6116).
- *ROC827 Remote Operation Controller Instruction Manual* (Form A6175)
- *ROCLINK 800 Configuration Software User Manual* (Form A6121).

1.2 Product Overview

The ROC300 Protocol Emulation program enables a ROC800 to respond to requests from a ROC protocol host driver, used in ROC300-Series Remote Operations Controllers and FloBoss Flow Managers. The program converts ROC Plus protocol point types (used in the ROC800) to ROC Protocol point types and parameters, where applicable. The program also allows you to use specific opcodes to receive and send data from the host to the ROC800.

The ROC800 receives requests from a host on a specified communications port. The program converts both ROC Plus protocol point types and parameters to ROC Protocol point types and parameters and ROC Plus protocol Type, Logical, and Parameter (TLPs) to analogous ROC protocol TLPs. The program enables you to use specific opcodes to receive data from the host and to send data from the ROC800. You can access all 200 history points in the ROC800 using opcode 130.

Once you have loaded this program and activated it for a given communications port (see Section 3.1), the ROC Plus Protocol communications are not available on that port. ROCLINK 800 will not connect and allow you to make configuration changes to that selected port. However, one way to have ROC Plus Protocol and the ROC300 Protocol Emulation program available on a given port is to write a supervisory FST program to control which protocol is active. For example, the FST command could be time-related to change the value of point type 69/76, logical 0, parameters 1 and 3 through 6. The parameter number indicates which comm port is active: 0 disables ROC300 Protocol Emulation while 1 enables it (see Section 4.3).

Note: Be careful if you change the baud rate for the comm port used for ROC Protocol communications. (You define this using the System Configuration tab on the Device Information screen, accessed by selecting **ROC** > **Information** > Device Information screen.) If the host computer changes the baud rate of the port on which this program runs, this also changes the baud rate of any other ports on the same Baud Rate Generator.

For further information on the ROC and ROC Plus protocols, refer to

- *ROC Plus Protocol User Manual* (Form A6127), part number D301180X012.
- *ROC Protocol User Manual* (Form A4199), part number D301053X012.

1.2.1 Opcode Mappings by I/O Module Slot

The host computer uses opcode 130 (see Section 4.1) to poll for values of all 200 history points either by RAM Area 0 to 6 (which corresponds to History Segments 0 to 6) and point numbers 0 to 29 or by RAM Area 0 only and point numbers 0 to 199. When the host computer requests I/O module TLPs, the program assigns logicals based on the module slot in which the I/O module is located:

Table 1. Opcode Mappings Based on I/O Module Slot

ROC800 Module Position[1, 3]	Logical Range[2] (Maximum)
1	0 to 15
2	16 to 31
3	32 to 47
4	48 to 63
5 (Unavailable; reserved for System AIs)	64 to 79
6	80 to 95
7	96 to 111
8	112 to 127
9	128 to 143

[1] Slots 1 to 4 and slots 6 to 9 (with the exception of slot 5) are available.

[2] Logical ranges may change in future releases.

[3] *Table 1* assumes 16 points for each ROC800 module position.

1.2.2 Events and Alarms Mapping

Whether the host computer can process certain alarm and event information from the ROC800 depends on how you configure this program and if the point type (or parameter) corresponds to a point type (or parameter) in the ROC Protocol. The ROC Protocol supports 240 alarms and 240 events. ROC800 can store up to 450 alarms and 450 events. During configuration (see Section 3.1) you indicate whether the program retains only the last 240 alarms or events or the full 450 alarms or events.

Note: The program always sends system events (such as warm starts or cold starts) to the host, since these events have the same format in both the ROC and ROC Plus protocols.

1.2.3 Point Type Conversions

The program converts any ROC800 point type that can be converted to a ROC protocol, as shown in the following table. As appropriate for the point type, the program converts parameter numbers as well.

Table 2. ROC800 Point Type Conversions

ROC800 Point Type	Converted to ROC Protocol Point Type
91 – System Variables	15
95 – Communication Ports	14
96 – FST Parameters	16
98 – Soft Point Parameters	17
99 – Configurable Opcode Table	0
101 – Discrete Inputs	1

ROC800 Point Type	Converted to ROC Protocol Point Type
102 – Discrete Outputs	2
103 – Analog Inputs	3
104 – Analog Outputs	4
105 – Pulse Inputs	5
106 – RTD	3
107 – Thermocouple	3
108 – Multi-Variable Sensor	40
109 – System Analog Inputs	3
110 – PID Control Parameters	6
112 – Station Parameters	7 or 41
113 – Orifice Meter Run Configuration	7 or 41
114 – Orifice Meter Run Values	41 or 42
115 – Turbine Meter Run Configuration	7
116 – Turbine Meter Run Values	41 or 42
136 – ROC Clock	12

1.2.4 Unsupported Parameters

The program cannot support some parameters. If the host tries to access one of these unsupported parameters, the program may or may not send back an error, depending on the circumstances. The program has implemented the following rules to handle these parameters. These rules also apply when the Read-Only and Read-Write statuses don't match.

Table 3. Unsupported Parameter Handling

If ROC Protocol Parameter is…	And ROC Plus Parameter is…	Then Action on Read is…	Then Action on Write is…
Read-Only	Not Supported	Return 0 or other appropriate default	Error 105
Read-Only	Read-Only	Return actual value	Error 105
Read-Only	Read-Write	Return actual value	Error 105
Read-Write	Not Supported	Return 0 or other appropriate default	No error
Read-Write	Read-Only	Return actual value	Error 105
Read-Write	Read-Write	Return actual value	No error

1.3 Program Requirements

Two versions of the program are provided. The versions use different point types, but are identical in function. Only one program using a specific point type will run on the ROC at any given time. Load the program version which uses a point type set that does not conflict with programs currently running on the ROC.

Program specifics include:

File Name	Target Unit/ Version	User Defined Point (UDP)	Flash Used (in bytes)	SRAM Used (in bytes)	DRAM Used (in bytes)	ROCKLINK 800 Version	Display Number
ROCProtocol_69_v124.tar	ROC800 2.10	69	60,416	130	155,648	1.80	11
ROCProtocol_76_v124.tar	ROC800 2.10	76	60,416	130	155,648	1.80	11

Note: You must connect a PC to the ROC800's LOI port before starting the download. Also, display #11 must be available for this program's use.

For information on viewing the memory allocation of user programs, refer to the *ROCLINK 800 Configuration Software User Manual* (Form A6121).

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Chapter 2 – Installation

This section provides instructions for installing the ROC300 Protocol Emulation program into the Flash memory on the ROC800. Read Section 1.3 of this manual for program requirements.

2.1 Downloading the Program

This section provides instructions for installing the program into the Flash memory on the ROC800.

Note: This manual shows the installation of **RocProtocol_76_v124.tar**. Choose the program version that uses point types which **do not** conflict with programs currently installed on the ROC.

To download the program using ROCLINK 800 software:

1. Connect the ROC to your computer using the LOI port.
2. Start and logon to ROCLINK 800.
3. Select **Utilities** > **User Program Administrator** from the ROCLINK menu bar. The User Program Administrator screen displays (see *Figure 1*):

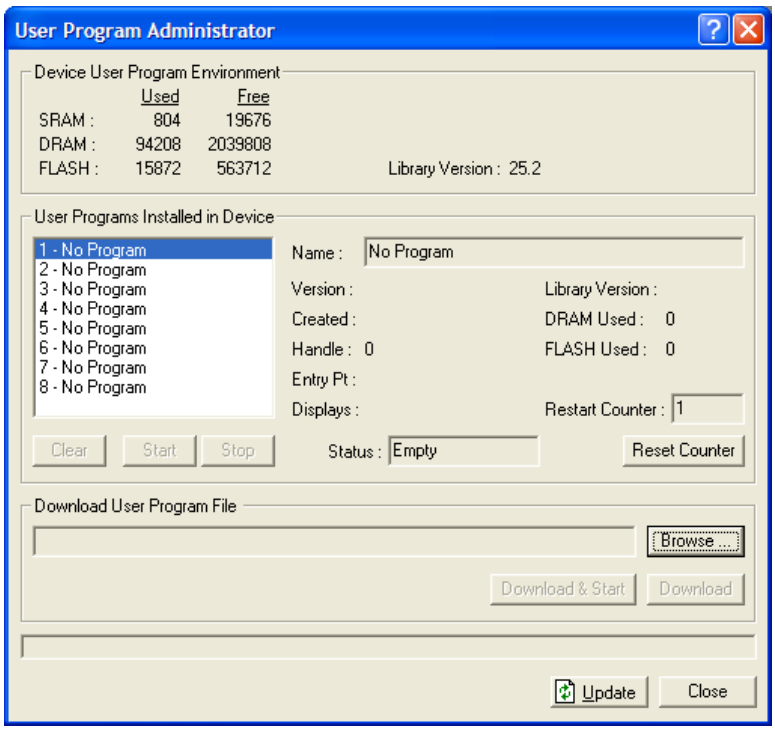

Figure 1. User Program Administrator

4. Select any empty program number into which to download the program.
5. Click **Browse** in the Download User Program File frame. The Select User Program File screen displays (see *Figure 2*).
6. Select the path and user program file to download from the CD-ROM. (Program files are typically located in the Program Files folder on the CD-ROM). As *Figure 2* shows, the screen lists all valid user program files with the .TAR extension:

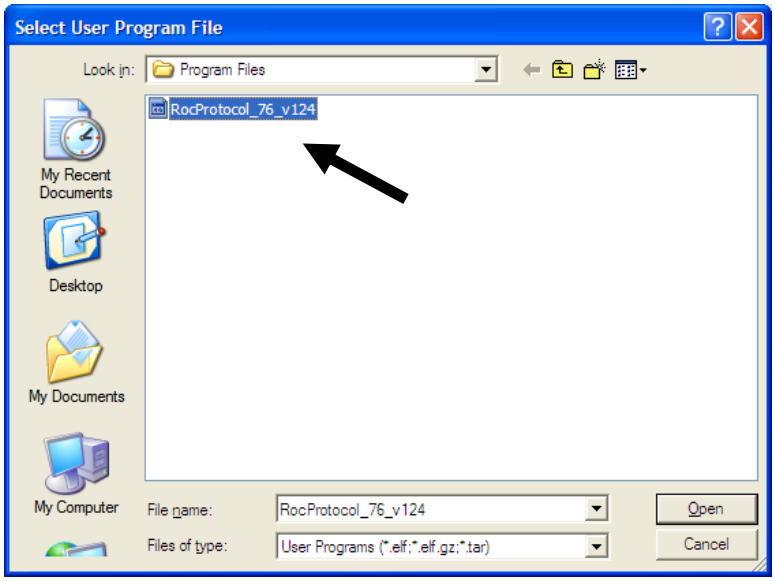

Figure 2. Select User Program File

7. Click **Open** to select the program file. The User Program Administrator screen displays. As shown in *Figure 3*, note that the Download User Program File frame identifies the selected program and that the **Download & Start** button is active:

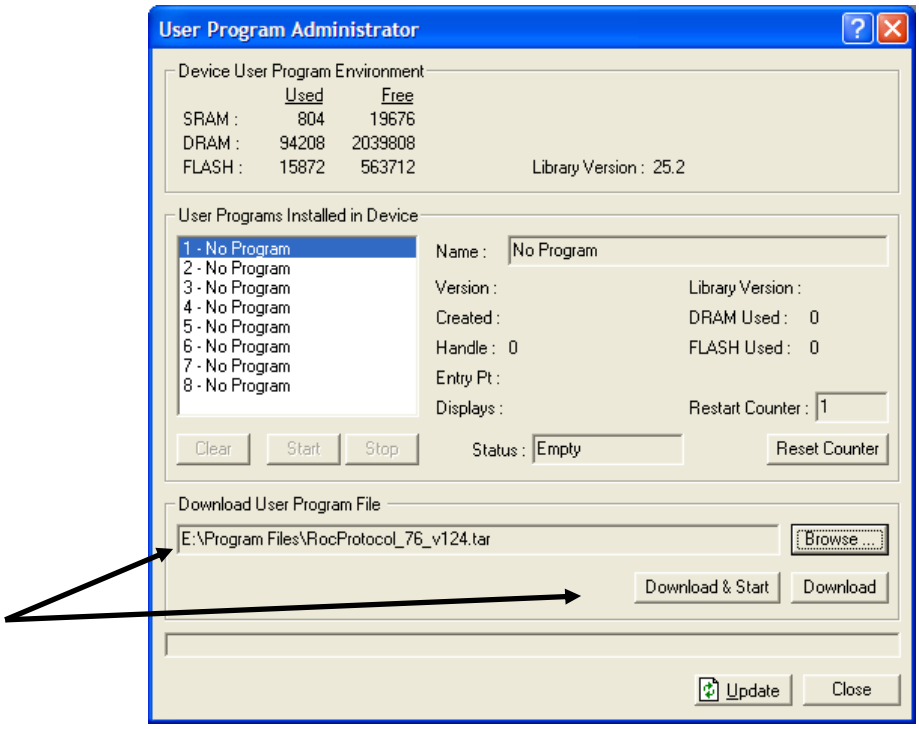

Figure 3. User Program Administrator

8. Click **Download & Start** to begin loading the selected programs. The following message displays:

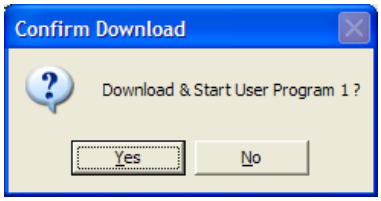

Figure 4. Confirm Download

9. Click **Yes** to begin the download. When the download completes the following message displays:

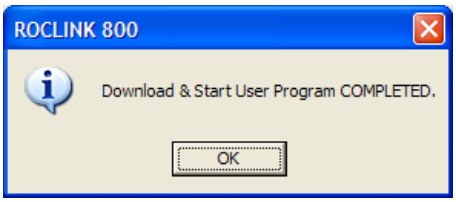

Figure 5. ROCLINK 800 Download Confirmation

10. Click **OK**. The User Program Administrator screen displays (see *Figure 6*). Note that:

- The Device User Program Environment frame reflects the use of system memory.
- The User Programs Installed in Device frame identifies the installed program(s).

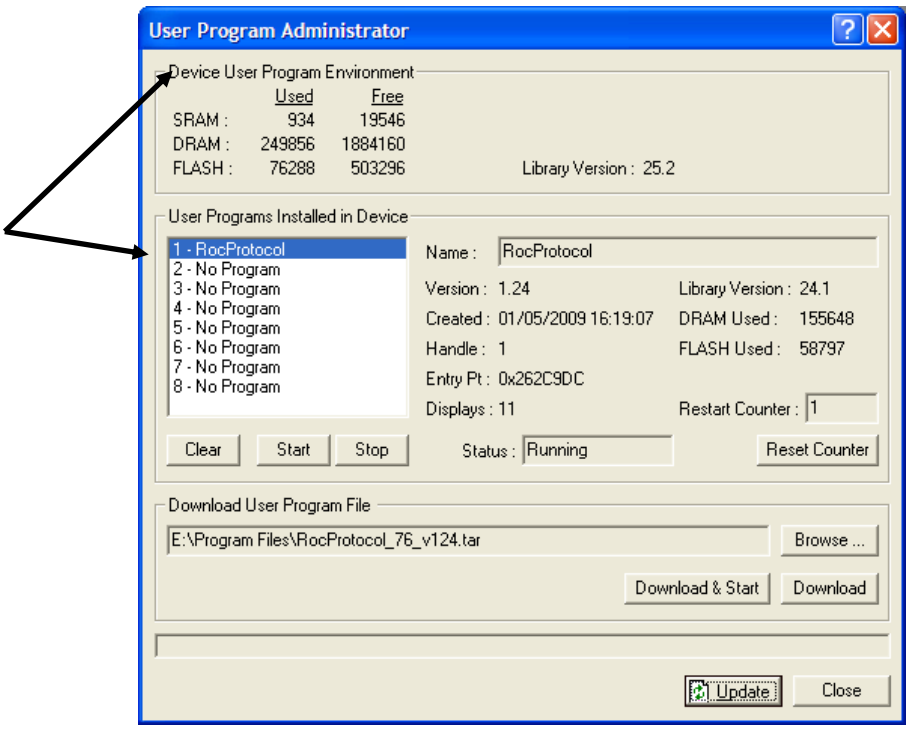

Figure 6. User Program Administrator

11. Click **Close**. The ROCLINK 800 screen displays and the download is complete.

12. Proceed to *Section 3* to configure the program.

Chapter 3 – Configuration

After you have loaded the ROC300 Protocol Emulation program on the ROC800, you configure the program using one ROCLINK 800 screen (History Segment Configuration) and a program-specific screen (ROC Protocol Converter).

- Use the program-specific ROC Protocol Converter screen to enable the conversion and set the number of events and alarms captured.
- Use ROCLINK 800's History Segment Configuration screen to configure history segments for the program.

You can access the program-specific screen from the main ROCLINK 800 screen:

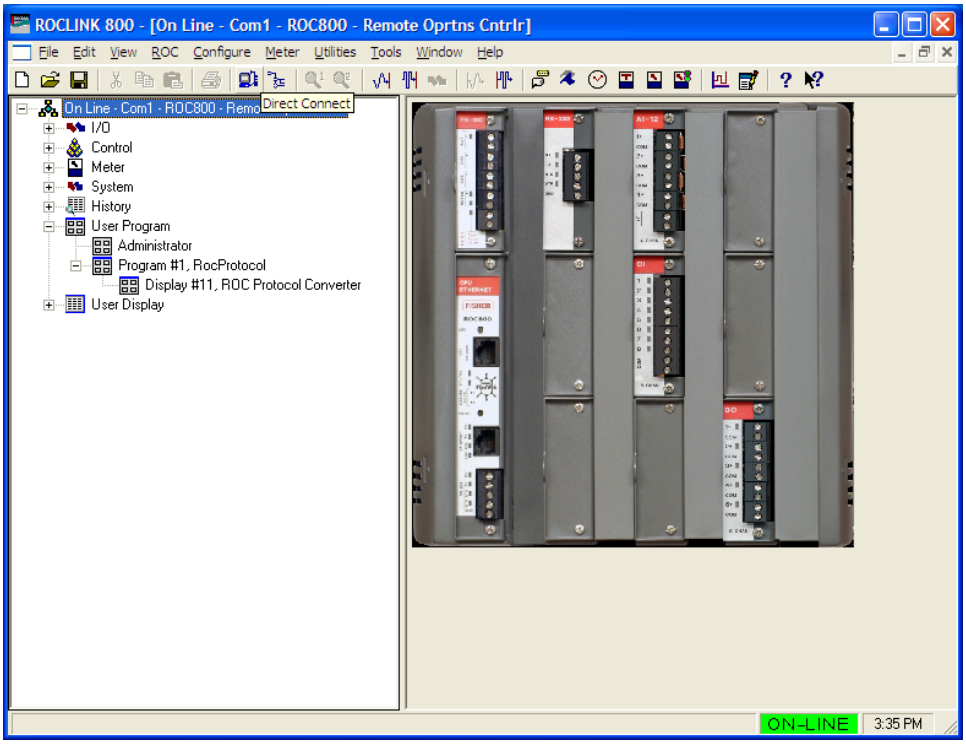

Figure 7. ROCLINK 800

3.1 ROC Protocol Converter Configuration Screen

Use this screen to enable the conversion and set the number of events and alarms.

Note: Whether the host computer can process certain alarm and event information from the ROC800 depends on how you configure the program and whether the point type (or parameter) corresponds to a point type (or parameter) in the ROC protocol.

To access this screen:

1. From the Directory Tree, select **User Program** > **Program #1, RocProtocol**.
2. Double-click **Display #11, ROC Protocol Converter.** The ROC Protocol Converter configuration screen displays:

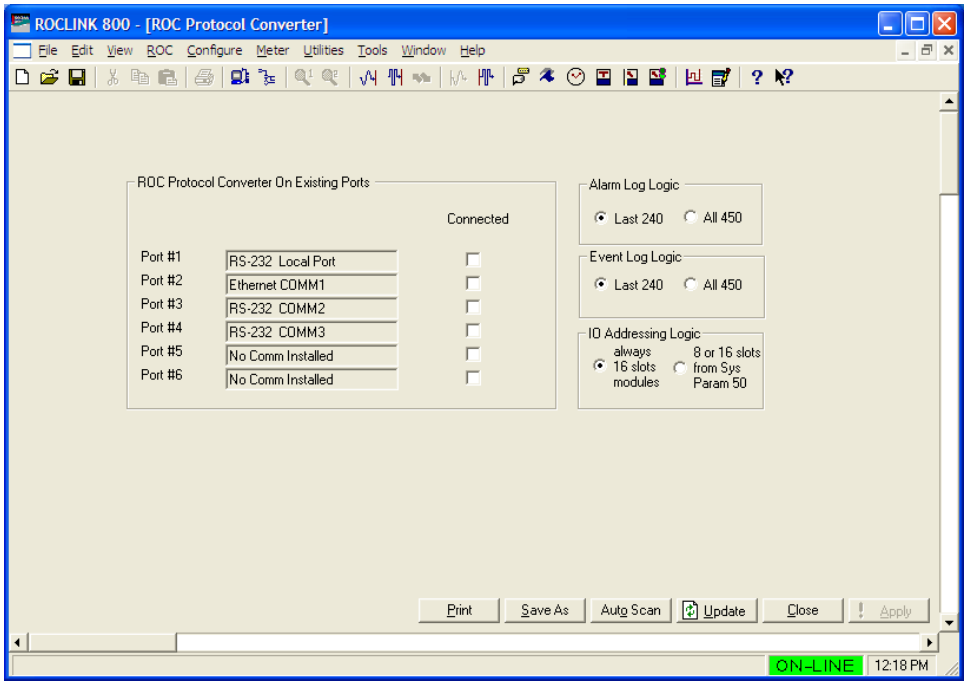
ROCLINK 800 - [ROC Protocol Converter]
File Edit View ROC Configure Meter Utilities Tools Window Help
ROC Protocol Converter On Existing Ports
Connected
Port #1 RS-232 Local Port
Port #2 Ethernet COMM1
Port #3 RS-232 COMM2
Port #4 RS-232 COMM3
Port #5 No Comm Installed
Port #6 No Comm Installed
Alarm Log Logic
Last 240 All 450
Event Log Logic
Last 240 All 450
IO Addressing Logic
always 16 slots modules
8 or 16 slots from Sys Param 50
Print Save As Auto Scan Update Close Apply
ON-LINE 12:18 PM

Figure 8. ROC Protocol Converter Configuration

3. Review—and change, if necessary—the values in the following fields:

Field	Description
ROC Protocol On Existing Ports	Check one box to select a ROC800 communications port. **Note**: Port #2, Ethernet COMM1, is **not** a valid choice for this program.
Alarm Log Logic	Sets whether the ROC800 logs the most recent 240 alarms the ROC Protocol supports or the full 450 alarms the ROC Plus Protocol (and the ROC800) supports. Selecting **Last 240** logs **only** the most recent 240 alarms.

Field	Description
	Note: If you select **All 450**, the ROC800 uses a ROC Plus Protocol TLP for any alarms without a ROC Protocol equivalent.
Event Log Logic	Sets whether the ROC800 logs the most recent 240 events the ROC Protocol supports or the full 450 events the ROC Plus Protocol (and the ROC800) supports. Selecting **Last 240** logs **only** the most recent 240 events. **Note**: If you select **All 450**, the ROC800 uses a ROC Plus Protocol TLP for any events without a ROC Protocol equivalent.
IO Addressing Logic	Sets whether the ROC800 exclusively uses modules with 16 points or if the program needs verify the number of points used for each module. Valid values are **always 16 slots modules** or **8 or 16 slots from Sys Param 50**.

4. Click **Apply** to save any changes you have made to this screen.
5. Click **OK** to return to the ROCLINK 800 screen. Proceed to *Section 3.2* to configure ROC800 history segments for use with this program.

3.2 History Segment Configuration Screen

Use this screen to configure history segments. The program can access all 200 history points in the ROC800, but you need to configure the ROC800 history segments specifically for the program. To access this screen:

1. Select **Configure** > **History Segments** from the ROCLINK menu bar. The History Segment Configuration screen displays:

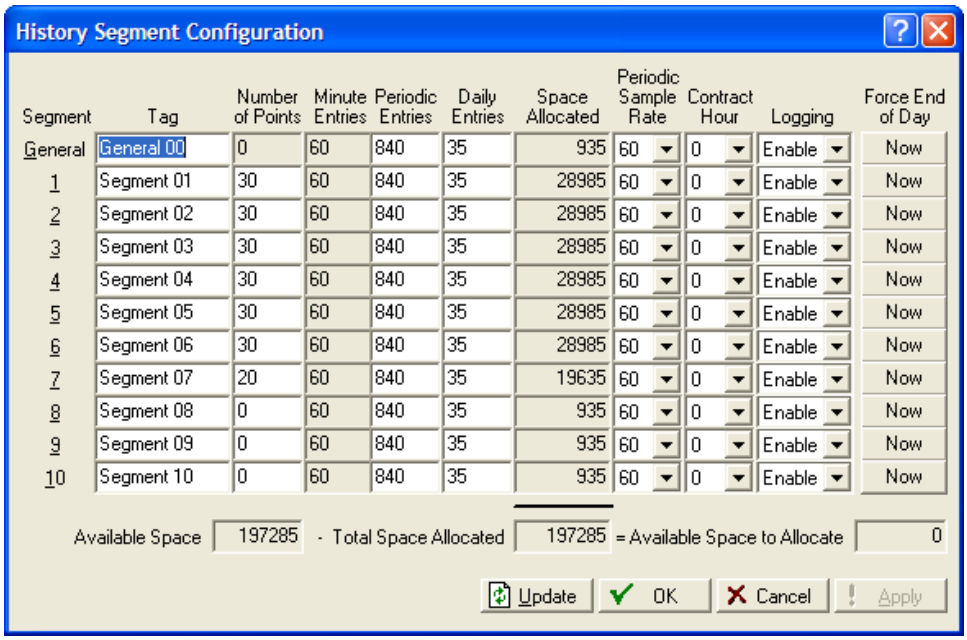

Figure 9. ROC Protocol Converter Configuration

2. Allocate history points to segments 01 through 07 (allocating a maximum of 30 points to segments 01 through 06 and a maximum of 20 points to segment 07). Ensure that the following fields contain the following values:

Field	Description
Periodic Entries	Enter **840** for each segment used.
Periodic Sample Rate	Enter **60** for each segment used.
Daily Entries	Enter **35** for each segment used.

3. Click **Apply** to save any changes you have made to this screen.

Note: Refer to the *ROCLINK 800 Configuration Software User Manual* (Form A6121) for further information on configuring history segments.

4. Click **OK** to return to the ROCLINK 800 screen. Proceed to *Section 3.3* to save the configuration.

3.3 Saving the Configuration

Whenever you modify or change the configuration, it is a good practice to save the final configuration to memory. To save the configuration:

1. Select **ROC** > **Flags**. The Flags screen displays:

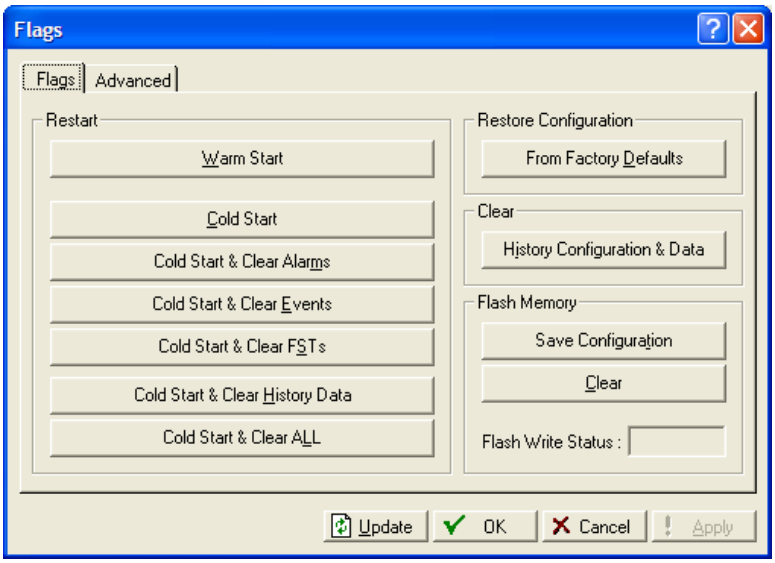

Figure 10. Flags screen

2. Click **Save Configuration**. A verification message displays:

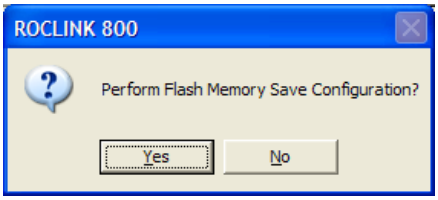

Figure 11. Perform screen

3. Click **Yes** to begin the save process. The Status field on the Flags screen displays *In Progress*. When the process ends, the Status field on the Flags screen displays *Completed*.
4. Click **Update** on the Flags screen. This completes the process of saving your new configuration.

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Chapter 4 – Reference

This section provides tables of information on the point types and parameters the ROC300 Protocol Emulation program uses:

- Supported Opcodes.
- Point Types.
- User Defined Point Types.

4.1 Supported Opcodes

The ROC300 Protocol Emulation program supports the following opcodes:

Table 4. Summary of Supported Opcodes

Opcode	Description
0	Send general update such as I/O update, gas flows, and control loop status.
6	Send ROC configuration
7	Send current time and date.
8	Set new time and date.
10	Send data from configurable opcode tables.
11	Set data in configurable opcode tables.
103	Send system information such as on and off times, manual and automatic alarm status, firmware version, and current time and date.
120	Send pointers for alarm, event, and history logs.
121	Send specified number of alarms starting at specified alarm pointer.
122	Send specified number of events starting at specified event pointer.
130	Send archived hourly and daily data for specified history point starting at specified history pointer.
165	Read history point configuration. **Note**: Writing history configuration **is not** supported.
167	Send specified contiguous block of parameters.
171	Set parameters for specified point.
180	Send specified parameters.
181	Set specified parameters.
255	Error messages transmitted by ROC in response to a request with invalid parameters or format.

4.2 Point Types 1 to 8, 10, 12 to 17, 19, 40 to 42

The following is a list of ROC300 point types and the corresponding mapping to the ROC800 running this program.

Note: This program **does not** support point types 9, 11, 18, 20 to 39, or 44 to 59.

4.2.1 Point Type 1: Discrete Input

Point Type 1: Discrete Input

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	101	0	Full
1	R/W	UINT 8	1	Filter	N/A	N/A	None – returns 3
2	R/W	UINT 8	1	Status	101	3	Full
3	R/W	BIN	1	Modes	101	1	Full
				Bit 7 – Manual Mode 0 = Normal Scan 1 = Scan Disabled			
				Bit 6 – RBX on Set 0 = Disabled on Set 1= RBX on Set	101	11	Full
				Bit 5 – RBX on Clear 0 = Disabled 1 = RBX on Clear	101	10	Full
				Bit 4 – Alarm Enable 0 = Disabled 1 = Log Alarms	101	9	Full
				Bit 3 – TDI Enable (ROC300-series and FloBoss 407) 0 = Disabled 1 = TDI Active	N/A	N/A	None – returns 0

Point Type 1: Discrete Input

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
3 (cont'd)				Bit 2 – Filter Interval 0 = 250 ms (50 ms for built-in DI) – ROC300-series & FloBoss 407 0 = 100 ms – FloBoss 500-series, FloBoss 103, & RegFlo 1 = 15 seconds (3 sec for built-in DI)	N/A	N/A	None – returns 0
				Bit 1 – Latch Enable 0 = Disable 1 = Enable	101	5	Full
				Bit 0 – Invert Enable 0 = Disabled 1 = Enable	101	4	Full
4	R/O	BIN	1	Alarm Code Bit 7 – Manual Mode Bit 6 – Not Used Bit 5 – Status Change Bit 4 – TDI Rate Alarm Bit 3 – TDI High Alarm Bit 2 – TDI High High Alarm Bit 1 – TDI Low Alarm Bit 0 – TDI Low Low Alarm	101	12	Partial – Bits 7 and 5 are supported; all others are set to 0
5	R/W	UINT 32	4	Accumulated Value	101	6	Full
6	R/W	UINT 32	4	On Counter	101	7	Partial – ROC800 On Time in seconds (FLP) converts to 50 ms periods (UINT32)
7	R/W	UINT 32	4	Off Counter	101	8	Partial – ROC800 Off Time in seconds (FLP) converts to 50 ms periods (UINT32)
8	R/W	INT 16	2	0% Pulse Width	N/A	N/A	None – returns 0
9	R/W	INT 16	2	100% Pulse Width	N/A	N/A	None – returns 0
10	R/W	UINT 16	2	Max time between pulses / Max Count	N/A	N/A	None – returns 0

Point Type 1: Discrete Input

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
11	R/W	AC	10	Units	N/A	N/A	None – returns 0
12	R/W	UINT 16	2	Scan Period	N/A	N/A	None – returns 0
13	R/W	FLP	4	Low Reading (Zero) EU	N/A	N/A	None – returns 0
14	R/W	FLP	4	High Reading (Span) EU	N/A	N/A	None – returns 0
15	R/W	FLP	4	Low Alarm EU	N/A	N/A	None – returns 0
16	R/W	FLP	4	High Alarm EU	N/A	N/A	None – returns 0
17	R/W	FLP	4	Low Low Alarm EU	N/A	N/A	None – returns 0
18	R/W	FLP	4	Hi Hi Alarm EU	N/A	N/A	None – returns 0
19	R/W	FLP	4	Rate Alarm EU	N/A	N/A	None – returns 0
20	R/W	FLP	4	Alarm Deadband	N/A	N/A	None – returns 0
21	R/W	FLP	4	EU Value	N/A	N/A	None – returns 0
22	R/O	UINT 16	2	TDI Count	N/A	N/A	None – returns 0

4.2.2 Point Type 2: Discrete Output

Point Type 2: Discrete Output

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	102	0	Full
1	R/W	UINT 16	2	Time On	102	14	Partial – ROC800 Time On in seconds (FLP) converts to 50 ms periods (UINT16)
2	R/O	UINT 8	1	Not Used	N/A	N/A	None – returns 0
3	R/W	UINT 8	1	Status	102	8, 21, or 24	Full – When reading, uses param 24 (Physical). When writing, uses 8 (Auto) or 21 (Manual) depending on mode.
4	R/W	BIN	1	Mode Bit 7 – Manual Mode 0 = Normal Scan 1 = Scan Disabled	102	2	Partial – Normal Scan maps to Automatic in the ROC800 and Scan Disabled maps to Disabled in the ROC800
				Bit 6 – Not Used Bit 5 – Not Used	N/A	N/A	Full
				Bit 4 – Clear on Reset 0 = Disabled – Retain Last Status 1 = Enabled	102	7	Partial – ROC800 actually uses Failsafe value rather than clear
				Bit 3 – TDO Enabled 0 = Disabled 1 = Enabled	102	13	Full
				Bit 2 – Do not set this bit	N/A	N/A	None
				Bit 1 – Toggle 0 = Disabled 1 = Enabled	102	12	Full
				Bit 0 – Momentary 0 = Disabled 1 = Enabled	102	10 and 11	Full

Point Type 2: Discrete Output

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
5	R/O	BIN	1	Alarm Code: Bit 7 – Manual Mode Bits 6-0 – Not Used	102	6	Partial – Scanning Disabled alarm in ROC800 maps to bit 7, manual alarm in ROC800 not mapped
6	R/W	UINT 32	4	Accumulated Value	102	9	Full
7	R/W	AC	10	Units	102	1	Full
8	R/W	UINT 16	2	Cycle Time	102	15	Partial – ROC800 Cycle Time in seconds (FLP) converts to 50 ms periods (UINT16)
9	R/W	INT 16	2	0% Count	102	16	Partial – ROC800 Low Reading Time in seconds (FLP) converts to 50 ms periods (INT16)
10	R/W	INT 16	2	100% Count	102	17	Partial – ROC800 High Reading Time in seconds (FLP) converts to 50 ms periods (INT16)
11	R/W	FLP	4	Low Reading EU	102	18	Full
12	R/W	FLP	4	High Reading EU	102	19	Full
13	R/W	FLP	4	EU Value	102	20	Full

4.2.3 Point Type 3: Analog Input

Point Type 3: Analog Input

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	103/106/107/109	0/0/0/0	Full
1	R/W	AC	10	Units	103/106/107/109	1/1/1/1	Full
2	R/W	UINT16	2	Scan Period	103/106/107/109	3/3/5/3	Partial – ROC800 Scan Period in seconds (FLP) converts to 50 ms periods (UINT16)
3	R/W	UINT16	2	Filter	103/106/107/109	5/5/7/5	Full
4	R/O	INT 16	2	Adjusted A/D 0%	103/106/107/109	8/9/NA/8	Partial – This parameter is R/O in the ROC800 and can only be modified through the calibration routine. **Not** supported for ROC800 Thermocouple (Pt Type 107)
5	R/O	INT 16	2	Adjusted A/D 100%	103/106/107/109	12/13/NA/9	Partial – This parameter is R/O in the ROC800 and can only be modified through the calibration routine. **Not** supported for ROC800 Thermocouple (Pt Type 107)
6	R/W	FLP	4	Low Reading EU	103/106/107/109	13/14/NA/10	Full for ROC800 Point types 103, 106 and 109 **Not** supported for ROC800 Thermocouple (Pt Type 107)
7	R/W	FLP	4	High Reading EU	103/106/107/109	17/18/NA/11	Full for ROC800 Point types 103, 106 and 109. **Not** supported for ROC800 Thermocouple (Pt Type 107)
8	R/W	FLP	4	Low Alarm EU	103/106/107/109	24/25/11/15	Full
9	R/W	FLP	4	High Alarm EU	103/106/107/109	25/26/12/16	Full
10	R/W	FLP	4	Low Low Alarm EU	103/106/107/109	23/24/10/14	Full
11	R/W	FLP	4	Hi Hi Alarm EU	103/106/107/109	26/27/13/17	Full

Point Type 3: Analog Input

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
12	R/W	FLP	4	Rate Alarm EU	103/106/107/109	27/28/14/18	Full
13	R/W	FLP	4	Alarm Deadband	103/106/107/109	28/29/15/19	Full
14	R/W	FLP	4	Filtered EUs	103/106/107/109	21/22/9/12	Full
15	R/W	BIN	1	Mode	103/106/107/109	2/2/2/2	Full
				Bit 7 – Manual Mode 0 = Normal Scan 1 = Manual Scan			
				Bit 6 – RBX on Set 0 = Disabled 1 = Active	103/106/107/109	31/32/18/22	Full
				Bit 5 – RBX on Clear 0 = Disabled 1 = Active	103/106/107/109	30/31/17/21	Full
				Bit 4 – ALM Enable 0 = Disabled 1 = Log Alarm	103/106/107/109	29/30/16/20	Full
				Bit 3 – Average Enable (for ROCs & FloBoss) 0 = Disabled 1 = Average Enable	103/106/107/109	6/6/8/6	Full
				Bit 2 – Temp Comp Enable 0 = Disabled 1 = Temp Comp Enable	N/A	N/A	None – returns 0
				Bit 1 – Clipping 0 = Disable 1 = Clipping Enable	103/106/107/109	22/23/NA/13	Full for ROC800 Point types 103, 106 and 109. **Not** supported for ROC800 Thermocouple (Pt Type 107)
				Bit 0 – Not Used	N/A	N/A	Full

Point Type 3: Analog Input

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
16	R/O	BIN	1	Alarm Code Bit 7 – Manual Mode Bit 6 – Point Fail Bit 5 – Not Used Bit 4 – Rate Alarm Bit 3 – High High Alarm Bit 2 – High Alarm Bit 1 – Low Low Alarm Bit 0 – Low Alarm	103/106/107/109	32/33/19/23	Full
17	R/O	UINT 16	2	Raw A/D Input	103/106/107/109	7/8/NA/7	Full for ROC800 Point types 103, 106 and 109, **Not** supported for ROC800 Thermocouple (Pt Type 107)
18	R/O	INT 16	2	Actual Scan Time	103/106/107/109	4/4/6/4	Partial – ROC800 Actual Scan Time in seconds (FLP) converts to 50 ms periods (INT16)

4.2.4 Point Type 4: Analog Output

Point Type 4: Analog Output

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	104	0	Full
1	R/W	AC	10	Units	104	1	Full
2	R/W	INT 16	2	Adjusted D/A 0%	104	8	Full
3	R/W	INT 16	2	Adjusted D/A 100%	104	9	Full
4	R/W	FLP	4	Low Reading EU	104	10	Full
5	R/W	FLP	4	High Reading EU	104	11	Full
6	R/W	FLP	4	Value in EUs	104	12,14, or 16	Full – When reading, use param 16 (Physical). When writing, use 12 (Auto) or 14 (Manual) depending on mode.
7	R/W	BIN	1	Mode Bit 7 – Manual Mode 0 = Normal Scan 1 = Manual Scan	104	2	Partial – Normal Scan maps to Automatic in the ROC800 and Scan Disabled maps to Disabled in the ROC800
				Bit 6 – RBX on Set 0 = Disabled 1 = Active	104	5	Full
				Bit 5 – RBX on Clear 0 = Disabled 1 = Active	104	4	Full
				Bit 4 – ALM Enable 0 = Disabled 1 = Log Alarms	104	3	Full
				Bit 3 – Clear on Reset 0 = Disabled 1 = Enable	104	7	Partial – ROC800 actually uses Failsafe value rather than clear
				Bit 2-0 – Unused	N/A	N/A	Full

Point Type 4: Analog Output

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
8	R/O	BIN	1	Alarm Code: Bit 7 = Manual Mode Bit 6 = Point Fail Bits 5 through 0 – Not Used	104	6	Partial – Scanning Disabled alarm in ROC800 maps to bit 7, manual alarm in ROC800 is not mapped.
9	R/O	INT 6	2	Raw D/A Output	104	13	Full

4.2.5 Point Type 5: Pulse Input

Point Type 5: Pulse Input

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	105	0	Full
1	R/W	AC	10	Units	105	1	Full
2	R/W	UINT 8	1	Rate Flag	105	11	Full
3	R/W	UINT 8	1	Rate Period	105	7	Full
4	R/O	UINT 8	1	Not Used	N/A	N/A	Full
5	R/W	UINT 16	2	Scan Period	105	3	Partial – ROC800 Scan Period in seconds (FLP) converts to 50 ms periods (UINT16)
6	R/W	FLP	4	Conversion	105	9	Full
7	R/W	FLP	4	Low Alarm EU	105	15	Full
8	R/W	FLP	4	High Alarm EU	105	16	Full
9	R/W	FLP	4	Low Low Alarm EU	105	14	Full
10	R/W	FLP	4	Hi Hi Alarm EU	105	17	Full
11	R/W	FLP	4	Rate Alarm EU	105	18	Full
12	R/W	FLP	4	Alarm Deadband – Rollover Maximum	105	12 and 19	Full
13	R/W	FLP	4	Value in EUs	105	13	Full
14	R/W	BIN	1	Mode	105	2	Full
				Bit 7 – Manual Mode 0 = Normal Scan 1 = Manual Scan			
				Bit 6 – RBX on Set 0 = Disabled 1 = Active	105	22	Full
				Bit 5 – RBX on Clear 0 = Disabled 1 = Active	105	21	Full

Point Type 5: Pulse Input

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
14 (cont'd)				Bit 4 – ALM Enable 0 = Disabled 1 = Log Alarm	105	20	Full
				Bit 3 – Conversion 0 = Reciprocal Conversions – EUs/Pulse 1 = Direct Conversion – Pulses/EU	105	8	Full
				Bits 2 through 0 – Not Used	N/A	N/A	Full
15	R/O	BIN	1	Alarm Code Bit 7 – Manual Mode Bits 5 through 6 – Not Used Bit 4 – Rate Alarm Bit 3 – High High Alarm Bit 2 – High Alarm Bit 1 – Low Low Alarm Bit 0 – Low Alarm	105	23	Full
16	R/W[1]	UINT 32	4	Accumulated Value	105	4	Full
17	R/O	FLP	4	Current Rate	105	10	Full
18	R/W	FLP	4	Today's Total	105	24	Full
19	R/O	FLP	4	Yesterday's Total	105	25	Full
20	R/W	UINT 32	4	Pulses for Day – FloBoss 500-series, FloBoss 103, RegFlo	105	6	Full

4.2.6 Point Type 6: PID

Point Type 6: PID

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	110	0	Full
1	R/W	BIN	1	Control Type	110	1	Full
				Bit 7 – Shutdown 1 = Shutdown 0 = PID Loop Operational			
				Bit 6 – Manual Tracking Enable 1 = Manual Mode 0 = Disable	110	7	Full
				Bit 5 – Not Used unless the PID Point is Configured for DO Control (ROC300-series and FloBoss 407) 1 = Error 0 = Off	N/A	N/A	Not supported
				Bit 4 – Control Loop Shut Down 1 = Stop on reset 0 = Disable	110	6	Full
				Bit 3 – Override Select (FloBoss 500-series, FloBoss 103, & RegFlo)	110	22	Full
				Bit 2 – DO Control 1 = DO Control 0 = AO Control	110	5	Full
				Bit 1 – Selects Primary or Override 1 = Override 0 = Primary	110	21	Partial – ROC800 Override only mode **not** supported

Point Type 6: PID

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
1 (cont'd)				Bit 0 – Mode of Operation 1 = Automatic 0 = Manual	110	1	Partial – ROC800 remote setpoint mode **not** supported
2	R/O	UINT 8	1	Switch (Loop) Status	110	36	Full
3	R/O	UINT 16	2	Actual Loop Period – Scan Time	110	3	Partial – ROC800 Actual Loop Period in seconds (FLP) converts to 50 ms periods (UINT16)
4	R/W	TLP	3	Primary Input Point	110	8	Full
5	R/W	TLP	3	Primary Output – Output of PID	110	38 or 39	Full
6	R/O	FLP	4	Primary Switch Setpoint	N/A	N/A	None – returns 0.0
7	R/O	TLP	3	Primary Switch Process Variable	N/A	N/A	None – returns 0,0,0
8	R/O	AC	1	Primary Switch Mode	N/A	N/A	None – returns blank
9	R/W	TLP	3	Override Input Point	110	23	Full
10	R/W	TLP	3	Second Output of PID	110	40	Full
11	R/O	FLP	4	Override Switch Setpoint	N/A	N/A	None – returns 0.0
12	R/O	TLP	3	Override Switch Process Variable	N/A	N/A	None – returns 0,0,0
13	R/O	AC	1	Override Switch Mode	N/A	N/A	None – returns blank
14	R/W	FLP	4	Primary Setpoint	110	11	Full
15	R/W	FLP	4	Primary Setpoint Maximum Change Rate	110	14	Full
16	R/W	UINT 16	2	Primary Loop Period	110	2	Partial – ROC800 Loop Period in seconds (FLP) converts to 50 ms periods (UINT16)
17	R/W	FLP	4	Primary Proportional Gain	110	15	Full
18	R/W	FLP	4	Primary Integral Gain	110	16	Full
19	R/W	FLP	4	Primary Derivative Gain	110	17	Full

Point Type 6: PID

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
20	R/W	FLP	4	Primary Scale Factor	110	18	Full
21	R/W	FLP	4	Primary Integral Deadband	110	19	Full
22	R/W	FLP	4	Primary Process Variable	110	9	Full
23	R/W	FLP	4	Primary Output EU – Current Output of PID	110	37	Full
24	R/O	FLP	4	Primary Switch Process Variable - Primary Change in Output	110	20	Partial – Supports the FB503 interpretation of this parameter as the primary change in output
25	R/O	FLP	4	Minimum Control Time	N/A	N/A	None – returns 0.0
26	R/W	FLP	4	Override Setpoint	110	26	Full
27	R/W	FLP	4	Override Setpoint Maximum Change Rate	110	29	Full
28	R/O	UINT 16	4	Override Loop Period	110	2	Partial – provides overall loop period converted to 50 ms periods
29	R/W	FLP	4	Override Proportional Gain	110	30	Full
30	R/W	FLP	4	Override Integral Gain	110	31	Full
31	R/W	FLP	4	Override Derivative Gain	110	32	Full
32	R/W	FLP	4	Override Scale Factor	110	33	Full
33	R/W	FLP	4	Override Integral Deadband	110	34	Full
34	R/W	FLP	4	Override Process Variable	110	24	Full
35	R/O	FLP	4	Override Output EU – Current Output of PID	110	37	Partial – this value is R/O, uses parameter 23 to write to the output
36	R/O	FLP	4	Override Switch Process Variable – Override Change in Output	110	35	Partial – Supports the FB503 interpretation of this parameter as the override change in output.

4.2.7 Point Type 7: AGA Flow Parameters

Point Type 7: AGA Flow Parameters

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	113/115	0/0	Full
1	R/W	FLP	4	Latitude	112	20	Full
2	R/W	FLP	4	Elevation	112	19	Full
3	R/W	BIN	1	Calculation Method	N/A	N/A	None – returns 0
				Bit 7 – Manual Mode 0 = Normal 1 = Manual			
				Bit 6 – RBX Set 0 = Disabled 1 = Active	113/115	6/5	Full
				Bit 5 – RBX on Clear 0 = Disabled 1 = Active	113/115	5/4	Full
				Bit 4 – ALM Enable 0 = Disabled 1 = Log Alarms	113/115	4/3	Full
				Bit 3 – US or Metric 0 = US Units 1 = Metric Units	112	4	Full
				Bit 2 – AGA3 Algorithm 0 = 1985 Algorithm 1 = 1992 Algorithm	112	2	Partial –always returns 1
				Bit 1 – Flow Calculation Method 0 = AGA3 1 = AGA7	N/A	N/A	Partial – Fills requests for logical instances of AGA points with orifice points first, and then turbine points, so this is R/O
				Bit 0 – Compressibility Method 0 = NX19 1 = AGA8	N/A	N/A	Partial – always returns 1

Point Type 7: AGA Flow Parameters

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
4	R/W	BIN	1	AGA Configuration Options	112	24	Partial – this is based on the gas quality live/constant parameter in the ROC800
				Bit 7 – Log Methane Adjustment 0 = Yes 1 = No			
				Bit 6 – Heating Value 0 = Mass 1 = Volume Basis	N/A	N/A	Partial – always returns 1
				Bit 5 – Gravitational Acceleration 0 = Calculate 1 = Enter Acceleration	112	17	Full
				Bit 4 – Heating Capacity 0 = Calculate 1 = Enter Heating Value	N/A	N/A	Partial – always returns 1
				Bit 3 – Static Pressure Value 0 = Gauge 1 = Absolute Static Press	113/115	2/2	Full
				Bit 2 – Static Pressure Value 0 = Downstream 1 = Upstream Static Press	113/115	3/NA	Full
				Bit 1 – Specific Gravity 0 = Calculate 1 = Enter Specific Gravity	N/A	N/A	None – always returns 0
				Bit 0 – Tap 0 = Flange Tap 1 = Pipe Tap	N/A	N/A	None – always returns 0
5	R/W	FLP	4	Specific Gravity	112	23	Full
6	R/W	FLP	4	Heating Value	112	22	Full
7	R/W	FLP	4	Gravitational Acceleration	112	18	Full

Point Type 7: AGA Flow Parameters

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
8	R/O	UINT 16	2	Scan Period	N/A	N/A	None – always returns 1
9	R/W	FLP	4	Pipe Diameter	113/115	12/NA	Full
10	R/W	FLP	4	Orifice Diameter	113/115	15/NA	Full
11	R/W	FLP	4	Orifice Ref. Temperature	113/115	16/NA	Full
12	R/W	FLP	4	Orifice Material	113/115	17/NA	Full
13	R/W	AC	30	Meter Run Identification	113/115	1/1	Full
14	R/O	BIN	1	Alarm Code Bit 7 – Manual Mode Bit 6 – No Flow Bits 5, 4, and 1 – Not Used Bit 2 – High Alarm Bit 0 – Low Alarm	113/115	7/6	Full
15	R/W	FLP	4	Low Alarm EU	113/115	8/7	Full
16	R/W	FLP	4	High Alarm EU	113/115	9/8	Full
17	R/W	FLP	4	Viscosity	113/115	18/NA	Full
18	R/W	FLP	4	Specific Heat Ratio	113/115	19/NA	Full
19	R/W	FLP	4	Contract or Base Pressure	112	13	Full
20	R/W	FLP	4	Contract or Base Temperature	112	14	Full
21	R/W	FLP	4	Low DP Cutoff or K-Factor	113/115	20/11	Full
22	R/W	FLP	4	Fpwl – Gravitational User Correction Factor	113/115	34/21	Partial – Despite description, this factor has always been used as the “User Correction Factor,” so that value is mapped.
23	R/W	FLP	4	N_2 – Nitrogen	112	26	Full
24	R/W	FLP	4	CO_2 – Carbon Dioxide	112	27	Full
25	R/W	FLP	4	H_2S – Hydrogen Sulfide	112	40	Full
26	R/W	FLP	4	H_2O – Water	112	41	Full

Point Type 7: AGA Flow Parameters

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
27	R/W	FLP	4	He – Helium	112	42	Full
28	R/W	FLP	4	CH_4 – Methane	112	28	Full
29	R/W	FLP	4	C_2H_6 – Ethane	112	29	Full
30	R/W	FLP	4	C_3H_8 – Propane	112	30	Full
31	R/W	FLP	4	C_4H_{10} – n-Butane	112	31	Full
32	R/W	FLP	4	C_4H_{10} – i-Butane	112	32	Full
33	R/W	FLP	4	C_5H_{12} – n-Pentane	112	33	Full
34	R/W	FLP	4	C_5H_{12} – i-Pentane	112	34	Full
35	R/W	FLP	4	C_6H_{14} – n-Hexane	112	35	Full
36	R/W	FLP	4	C_7H_{16} – n-Heptane	112	36	Full
37	R/W	FLP	4	C_8H_{18} – n-Octane	112	37	Full
38	R/W	FLP	4	C_9H_{20} – n-Nonane	112	38	Full
39	R/W	FLP	4	$C_{10}H_{22}$ – n-Decane	112	39	Full
40	R/W	FLP	4	O_2 – Oxygen	112	43	Full
41	R/W	FLP	4	CO – Carbon Monoxide	112	44	Full
42	R/W	FLP	4	H_2 – Hydrogen	112	45	Full
43	R/O	UINT 8	1	Not Used	N/A	N/A	Full
44	R/W	UINT 8	1	Stacked DP Enable	113/115	21/NA	Full
45	R/W	TLP	3	Low DP Input	113/115	24/NA	Full
46	R/W	TLP	3	DP/Flow Meter Input	113/115	25/13	Full
47	R/W	TLP	3	Static Press Input	113/115	27/15	Full
48	R/W	TLP	3	Temperature Input	113/115	29/17	Full
49	R/W	FLP	4	Low DP Setpoint	113/115	23/NA	Full
50	R/W	FLP	4	High DP Setpoint	113/115	22/NA	Full
51	R/W	FLP	4	DP/Meter Input Value	113/115	26/14	Full
52	R/W	FLP	4	Static Press Value	113/115	28/16	Full

Point Type 7: AGA Flow Parameters

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
53	R/W	FLP	4	Temperature Value	113/115	30/18	Full

4.2.8 Point Type 10: AGA Flow Calculation Values

Point Type 10: AGA Flow Calculation Values

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/O	FLP	4	Orifice DP/Turbine Meter Value	113/115	26/14	Full
1	R/O	FLP	4	Static Pressure Value	113/115	28/16	Full
2	R/O	FLP	4	Temperature Value	113/115	30/18	Full
3	R/O	FLP	4	Instantaneous Flow (Flow rate per Day) – MCF/Day or Km^3/Day	114/116	0/0	Full
4	R/O	FLP	4	Instantaneous Energy (Energy rate per Day) – MMBTU/Day or GJ/Day	114/116	1/1	Full
5	R/O	FLP	4	Flow Today – MCF or Km3	114/116	19/12	Full
6	R/O	FLP	4	Energy Today – MMBTU or GJ	114/116	29/22	Full
7	R/O	FLP	4	Flow Yesterday – MCF or Km3	114/116	20/13	Full
8	R/O	FLP	4	Energy Yesterday – MMBTU or GJ	114/116	30/23	Full
9	R/O	FLP	4	Orifice Pressure Extension (hwPf) / Turbine Uncorrected Flow Rate	114/115	4/14	Full
10	R/O	FLP	4	Orifice Multiplier Value (Cprime) / Turbine Multiplier Value	114/116	12/8	Full
11	R/O	FLP	4	Sample Time	N/A	N/A	None – always returns 1
12	R/O	FLP	4	Orifice Expansion Factor (Y) / Turbine Pressure Multiplier	114/116	7/4	Full
13	R/O	FLP	4	Reynolds Number	114/116	16/NA	Full
14	R/O	FLP	4	Orifice Ftf / Turbine Temperature Multiplier	114/116	NA/5	Partial – No Ftf factor in 1992 implementation of AGA3

Point Type 10: AGA Flow Calculation Values

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
15	R/O	FLP	4	Fpv - compressibility	114/116	9/6	Partial – Orifice returns Zf1 and Turbine returns compressibility multiplier
16	R/O	FLP	4	Fgr	N/A	N/A	None – always returns 1
17	R/O	FLP	4	Orifice Coefficient of Discharge (CdFT) / Turbine Temperature Multiplier	114/116	5/5	Full
18	R/O	FLP	4	Fpb	114/116	10/NA	Partial – not supported for AGA7
19	R/O	FLP	4	Ftb	114/116	11/NA	Partial – not supported for AGA7
20	R/O	FLP	4	Velocity of Approach (Ev)	114/116	6/NA	Full
21	R/O	FLP	4	Flowing Minute	N/A	N/A	None

4.2.9 Point Type 12: ROC Clock

Point Type 12: ROC Clock

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	UINT 8	1	Seconds	136	0	Full
1	R/W	UINT 8	1	Minutes	136	1	Full
2	R/W	UINT 8	1	Hours	136	2	Full
3	R/W	UINT 8	1	Day	136	3	Full
4	R/W	UINT 8	1	Month	136	4	Full
5	R/W	UINT 8	1	Year	136	5	Full – converts to 2-digit year
6	R/O	UINT 8	1	Leap Year	N/A	N/A	None – returns 0
7	R/O	UINT 8	1	Day of Week	136	6	Partial – Read only
8	R/O	UINT 8	6	Time: Seconds, Minutes, Hour, Day, Month, and Year	136	0-5	Full – program calculates this
9	R/O	UINT 8	1	Century	136	5	Full – converts to century
10	R/W	UINT 8	1	Daylight Savings Time Enable	136	8	Full

4.2.10 Point Type 13: System Flags

Point Type 13: System Flags

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	UINT 8	1	CRC Check	91	35	Full
1	R/O	UINT 8	1	DI/PI Selection	N/A	N/A	None
2	R/O	UINT 8	1	User LCD Enable	N/A	N/A	None
3	R/O	UINT 8	1	User Operator Port Enable	N/A	N/A	None
4	R/W	UINT 8	1	FST/Display Clear	91	19	Partial – clears **only** FSTs, not user displays
5	R/O	UINT 8	1	User COM1 Enable	N/A	N/A	None
6	R/O	UINT 8	1	User COM2 Enable	N/A	N/A	None
7	R/O	UINT 8	1	User Calc Enable	N/A	N/A	None
8	R/W	UINT 8	1	RTS Operator Interface Port (LOI)	95	45 (logical 0)	Full
9	R/W	UINT 8	1	RTS COM1 Port	95	45 (logical 1)	Full
10	R/W	UINT 8	1	RTS COM2 Port	95	45 (logical 2)	Full
11	R/W	UINT 8	1	Clear Config Memory	91	20	Full
12	R/W	UINT 8	1	I/O Scan Enable	91	25	Full
13	R/O	UINT 8	1	Auxiliary Output 2 On	N/A	N/A	None
14	R/O	UINT 8	1	Auxiliary Output 1 On	N/A	N/A	None

Point Type 13: System Flags

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
15	R/W	UINT 8	1	Cold (Hard) Start options: 0 = None 1 = Restore config from flash/defaults 2 = Restore config and clear alarm/event logs 3 = Restore config and clear ROC displays 4 = Restore config and clear FSTs 5 = Restore config and clear history 6 = Restore config and clear all of above	91	27	Partial – No ROC displays
16	R/W	UINT 8	1	Warm Start	91	26	Full
17	R/O	UINT 8	1	Read I/O	N/A	N/A	None
18	R/W	UINT 8	1	Write to Config Memory	91	21	Full
19	R/O	UINT 8	1	Config Memory Write Complete	91	22	Full
20	R/O	UINT 8	1	Event Log Flag	N/A	N/A	None
21	R/W	UINT 8	1	LOI Security On	95	44 (logical 0)	Partial – Read Only
22	R/W	UINT 8	1	Comm Port 1 Security On	95	44 (logical 1)	Partial – Read Only
23	R/W	UINT 8	1	Comm Port 2 Security On	95	44 (logical 2)	Partial – Read Only
24	R/O	UINT 8	1	Flag 24	N/A	N/A	None
25	R/O	UINT 8	1	Flag 25	N/A	N/A	None
26	R/O	UINT 8	1	Flag 26	N/A	N/A	None
27	R/O	UINT 8	1	Flag 27	N/A	N/A	None
28	R/O	UINT 8	1	Flag 28	N/A	N/A	None
29	R/O	UINT 8	1	Flag 29	N/A	N/A	None

4.2.11 Point Type 14: Communication Ports

Point Type 14: Communication Ports

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Tag Identification	95	0	Full
1	R/W	UINT 16	2	Baud Rate	95	1	Partial – only sets the baud rate if a baud rate generator is available for that baud rate
2	R/W	UINT 8	1	Stop bits	95	2	Full
3	R/W	UINT 8	1	Data bits	95	3	Full
4	R/W	UINT 8	1	Parity 0 = None 1 = Odd 2 = Even	95	4	Full
5	R/W	BIN	1	Status Bit 7 – User Status (ROC300-series, FloBoss 103, and FloBoss 407) Bits 6 through 2 – Not Used Bit 1 – RBX Status 0 = RBX Inactive 1 = RBX Active for this port Bit 0 – No Port Installed 0 = Comm Board Present 1 = No Comm Cards Installed	95	17 – Bit 1 (RBX Status) 5 – Bit 0 (No Port Installed)	Partial – No support for Bit 7 (User Status)

6	R/W	BIN	1	Mode Bit 7 – User Flag 0 = Reset 1 = Set	N/A	N/A	None
				Bit 6 – User Flag 0 = Reset 1 = Set	N/A	N/A	None
				Bit 5 – Store and Forward Port (FlashPAC & FloBoss 103) 0 = Same 1 = Opposite	N/A	N/A	None
				Bit 4 – Enable RTS / CTS 0 = Disabled 1 = Enabled	N/A	N/A	None
				Bit 3 – Not Used	N/A	N/A	None
				Bit 2 – Enable Extra Key-On (ROC300-series, FloBoss 103, and FloBoss 407) 0 = Disabled 1 = Enabled	N/A	N/A	None
				Bit 1 = Enable RBX 0 = RBX Disabled 1 = RBX Enabled	95	18	Full
				Bit 0 – Not Used	N/A	N/A	None
7	R/W	UINT 8	1	Key On Delay	95	7	Full
8	R/W	UINT 8	1	Key Off Delay – Turnaround	95	8	Full
9	R/W	UINT 8	1	Host Table Start (Modbus)	N/A	N/A	None
10	R/W	UINT 16	2	Host Retry Time (Modbus); Extra Key-on (RBX)	N/A	N/A	None
11	R/O	UINT 16	2	Alarm Pointer	95	19	Full
12	R/O	UINT 16	2	Receive Counter Copy	N/A	N/A	None
13	R/O	UINT 16	2	Retry Counter	N/A	N/A	None

14	R/O	UINT 16	2	Valid Receive Counter	95	36	Partial – returns ROC Plus Protocol valid receive counter
15	R/O	UINT 8	1	Modem Status	95	9	Full
16	R/W	UINT 8	1	Modem Type	95	10	Full
17	R/W	FLP	4	Connect Time	95	11	Full
18	R/W	AC	40	Configuration Command	95	12	Full
19	R/W	AC	40	Connect Command	95	13	Full
20	R/W	FLP	4	Disconnect Time	95	14	Full
21	R/W	FLP	4	Inactivity Time	95	15	Full
22	R/W	FLP	4	RBX Time Base #1	95	20	Full
23	R/W	UINT 8	1	RBX Retry Count #1	95	21	Full
24	R/W	FLP	4	RBX Time Base #2	95	22	Full
25	R/W	UINT 8	1	RBX Retry Count #2	95	23	Full
26	R/W	FLP	4	RBX Time Base #3	95	24	Full
27	R/W	UINT 8	1	RBX Retry Count #3	95	25	Full
28	R/W	UINT 8	1	RBX Address	95	26	Full
29	R/W	UINT 8	1	RBX Group	95	27	Full
30	R/W	UINT 8	1	Store & Forward Address #1 (not used for RegFlo)	95	28	Full
31	R/W	UINT 8	1	Store & Forward Group #1 (not used for RegFlo)	95	29	Full
32	R/W	UINT 8	1	Store & Forward Address #2 (not used for RegFlo)	95	30	Full
33	R/W	UINT 8	1	Store & Forward Group #2 (not used for RegFlo)	95	31	Full
34	R/W	UINT 8	1	Store & Forward Address #3 (not used for RegFlo)	95	32	Full
35	R/W	UINT 8	1	Store & Forward Group #3 (not used for RegFlo)	95	33	Full

4.2.12 Point Type 15: System Variables

Point Type 15: System Variables

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	UINT 8	1	ROC Address	91	0	Full
1	R/W	UINT 8	1	ROC Group	91	1	Full
2	R/W	AC	20	Station Name	91	2	Full
3	R/W	UINT 8	1	Active PIDs	91	15	Full
4	R/O	UINT 8	1	Active AGA Meter Runs	91	17+18	Partial – Read only
5	R/O	UINT 8	1	Active Tanks	N/A	N/A	None –always returns 0
6	R/O	UINT 8	1	Base Database Points – History 1	124	1 (logical 0)	Partial – no support for history segments 7-10
7	R/O	UINT 8	1	RAM1 Database Points – History 2	124	1 (logical 1)	Partial – no support for history segments 7-10
8	R/O	UINT 8	1	RAM2 Database Points – History 3	124	1 (logical 2)	Partial – no support for history segments 7-10
9	R/W	UINT 8	1	Force End of Day	124	11 (All logicals)	Full
10	R/W	UINT 8	1	Contract Hour	124	8 (logical 0)	Partial – Segment 0 Support only
11	R/O	AC	20	Version Name – Part Number	91	3	Full
12	R/O	AC	20	Hardware Identification Number	91	5	Full
13	R/O	AC	20	Time Created	91	4	Full
14	R/O	AC	12	ROM Serial Number	91	7	Partial – converts ROC800 serial number (UINT32) to 12 byte string
15	R/O	AC	20	Customer Name	N/A	N/A	None – returns blanks
16	R/O	UINT 8	1	Maximum PIDs	91	10	Full
17	R/O	UINT 8	1	Maximum AGA Meter Runs	91	11	Full
18	R/O	UINT 8	1	Maximum Tanks	N/A	N/A	None – always returns 0

Point Type 15: System Variables

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
19	R/O	UINT 8	1	FSTs Possible	91	12	Full
20	R/O	BIN	1	RAM Installed	N/A	N/A	None – always returns 0
21	R/O	BIN	1	ROM Installed	N/A	N/A	None – always returns 0
22	R/O	FLP	4	MPU Loading	91	23	Full
23	R/O	BIN	1	Utilities	N/A	N/A	None – always returns 0
24	R/O	UINT 16	2	Type of ROC or FloBoss	N/A	N/A	Return 3 (FlashPAC)
25	R/O	UINT 8	1	Units Flag	N/A	N/A	None – always returns 0

4.2.13 Point Type 16: FST Parameters

Point Type 16: FST Parameters

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	96	0	Full
1	R/W	FLP	4	Result Register	96	1	Full
2	R/W	FLP	4	Register #1	96	2	Full
3	R/W	FLP	4	Register #2	96	3	Full
4	R/W	FLP	4	Register #3	96	4	Full
5	R/W	FLP	4	Register #4	96	5	Full
6	R/W	FLP	4	Register #5	96	6	Full
7	R/W	FLP	4	Register #6	96	7	Full
8	R/W	FLP	4	Register #7	96	8	Full
9	R/W	FLP	4	Register #8	96	9	Full
10	R/W	FLP	4	Register #9	96	10	Full
11	R/W	FLP	4	Register #10	96	11	Full
12	R/W	UINT 32	4	Timer #1	96	12	Full
13	R/W	UINT 32	4	Timer #2	96	13	Full
14	R/W	UINT 32	4	Timer #3	96	14	Full
15	R/W	UINT 32	4	Timer #4	96	15	Full
16	R/W	AC	30	Message #1	96	16	Full
17	R/W	AC	30	Message #2	96	17	Full
18	R/O	AC	10	Message Data #1	96	18	Full
19	R/W	UINT 8	1	Miscellaneous #1	96	19	Full
20	R/W	UINT 8	1	Miscellaneous #1	96	20	Full
21	R/W	UINT 8	1	Miscellaneous #1	96	21	Full
22	R/W	UINT 8	1	Miscellaneous #1	96	22	Full
23	R/W	UINT 8	1	Compare Flag – SVD	96	23	Full

Point Type 16: FST Parameters

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
24	R/W	UINT 8	1	Run Flag	96	24	Full
25	R/O	UINT 16	2	Code Size	96	25	Partial – Read Only
26	R/O	UINT 16	2	Instruction Pointer	96	26	Partial – Read Only
27	R/W	UINT 16	2	Execution Delay	96	27	Full

4.2.14 Point Type 17: Soft Point Parameters

Point Type 17: Soft Point Parameters

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	98	0	Full
1	R/W	UINT 16	2	Integer Flag	98	23	Partial – maps to first short integer
2	R/W	FLP	4	Data #1	98	1	Full
3	R/W	FLP	4	Data #2	98	2	Full
4	R/W	FLP	4	Data #3	98	3	Full
5	R/W	FLP	4	Data #4	98	4	Full
6	R/W	FLP	4	Data #5	98	5	Full
7	R/W	FLP	4	Data #6	98	6	Full
8	R/W	FLP	4	Data #7	98	7	Full
9	R/W	FLP	4	Data #8	98	8	Full
10	R/W	FLP	4	Data #9	98	9	Full
11	R/W	FLP	4	Data #10	98	10	Full
12	R/W	FLP	4	Data #11	98	11	Full
13	R/W	FLP	4	Data #12	98	12	Full
14	R/W	FLP	4	Data #13	98	13	Full
15	R/W	FLP	4	Data #14	98	14	Full
16	R/W	FLP	4	Data #15	98	15	Full
17	R/W	FLP	4	Data #16	98	16	Full
18	R/W	FLP	4	Data #17	98	17	Full
19	R/W	FLP	4	Data #18	98	18	Full
20	R/W	FLP	4	Data #19	98	19	Full
21	R/W	FLP	4	Data #20	98	20	Full

4.2.15 Point Type 19: Database Parameters

Point Type 19: Database Parameters

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/O	FLP	4	Point to Tag	NA	NA	None – always returns 0
1	R/O	UINT 8	1	Archive Type	125-131	3	Partial – converts archive type
2	R/O	UINT 8	1	Point Type	125-131	2	Full
3	R/O	UINT 8	1	Point/Logical Number	125-131	2	Full
4	R/O	UINT 8	1	Parameter Number	125-131	2	Full
5	R/O	FLP	4	Yesterday's Value	125-131	6	Full

4.2.16 Point Type 40: Multi-Variable Sensor

Point Type 40: Multi-Variable Sensor

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Sensor Tag Identification	108	0	Full
1	R/W	UINT 8	1	Sensor Address	108	1	Full
2	R/W	BIN	1	Sensor Configuration	108	3/4/5/6	Full
3	R/W	UINT 8	1	Poll Mode	108	2	Full
4	R/O	UINT 8	1	Interface Revision	108	7	Full
5	R/O	BIN	1	Sensor Status (1 = True) Bit 7 = Manual Mode Bit 6 = 485 Comm Fail Bit 5 = Sensor Comm Fail Bit 4 = Input Frozen Bit 3 = Not Used Bit 2 = PT Fail Bit 1 = AP Fail Bit 0 = DP Fail	108	10	Partial – No support for bits 0, 1, 2
6	R/O	BIN	1	Sensor Alarms (1 = Enabled) Bit 6 through 7 = Not Used Bit 5 = PT High Alarm Bit 4 = AP High Alarm Bit 3 = DP High Alarm Bit 2 = PT Low Alarm Bit 1 = AP Low Alarm Bit 0 = DP Low Alarm	108	11	Full
7	R/W	FLP	4	Sensor Voltage	108	8	Full
8	R/W	FLP	4	Differential Pressure (DP) Reading	108	19	Full
9	R/W	FLP	4	Static Pressure (AP) Reading	108	35	Full
10	R/W	FLP	4	Temperature (PT) Reading	108	50	Full

Point Type 40: Multi-Variable Sensor

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
11	R/W	FLP	4	DP Reverse Flow	108	20	Full
12	R/O	FLP	4	Static Pressure Effect	108	12	Full
13	R/O	FLP	4	DP Minimum Calibration Value	108	13	Full
14	R/O	FLP	4	DP Calibration Midpoint 1	108	14	Full
15	R/O	FLP	4	DP Calibration Midpoint 2	108	15	Full
16	R/O	FLP	4	DP Calibration Midpoint 3	108	16	Full
17	R/O	FLP	4	DP Maximum Calibration Value	108	17	Full
18	R/O	FLP	4	AP Minimum Calibration Value	108	29	Full
19	R/O	FLP	4	AP Calibration Midpoint 1	108	30	Full
20	R/O	FLP	4	AP Calibration Midpoint 2	108	31	Full
21	R/O	FLP	4	AP Calibration Midpoint 3	108	32	Full
22	R/O	FLP	4	AP Maximum Calibration Value	108	33	Full
23	R/O	FLP	4	PT Minimum Calibration Value	108	44	Full
24	R/O	FLP	4	PT Calibration Midpoint 1	108	45	Full
25	R/O	FLP	4	PT Calibration Midpoint 2	108	46	Full
26	R/O	FLP	4	PT Calibration Midpoint 3	108	47	Full
27	R/O	FLP	4	PT Maximum Calibration Value	108	48	Full
28	R/O	UINT 8	1	Calibration Command	NA	NA	None – always returns 0
29	R/O	UINT 8	1	Calibration Type	NA	NA	None – always returns 0
30	R/O	FLP	4	Calibrate Set Value	NA	NA	None – always returns 0.0
31	R/O	FLP	4	Manual DP	NA	NA	None – always returns 0
32	R/O	FLP	4	Manual AP	NA	NA	None – always returns 0
33	R/O	FLP	4	Manual PT	NA	NA	None – always returns 0

Point Type 40: Multi-Variable Sensor

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
34	R/W	BIN	1	DP Mode Bit 7 – Not Used Bit 6 – RBX on Set 0 = Disable 1 = Enable Bit 5 – RBX on Clear 0 = Disable 1 = Enable Bit 4 – Alarm Enable 0 = Disable Alarm 1 = Enable Alarm Bit 1 through 3 – Not Used Bit 0 – Sensor Alarms 0 = Disable Alarm 1 = Enable Alarm	108	25,26,27	Partial – No support for bit 0
35	R/O	BIN	1	DP Alarm Code Bit 6 – Point Fail Bit 2 – High Alarm Bit 0 – Low Alarm Bit 7, 5, 4, 3, 1 – Not Used	108	28	Full
36	R/W	FLP	4	DP Low Alarm	108	22	Full
37	R/W	FLP	4	DP High Alarm	108	23	Full
38	R/W	FLP	4	DP Deadband	108	24	Full
39	R/W	FLP	4	DP Alarm Fault Value	108	21	Full

Point Type 40: Multi-Variable Sensor

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
40	R/W	FLP	4	AP Mode Bit 7 – Not Used Bit 6 – RBX on Set 0 = Disable 1 = Enable Bit 5 – RBX on Clear 0 = Disable 1 = Enable Bit 4 – Alarm Enable 0 = Disable Alarm 1 = Enable Alarm Bit 1 through 3 – Not Used Bit 0 – Sensor Alarms 0 = Disable Alarm 1 = Enable Alarm	108	40, 41, 42	Partial – No support for bit 0
41	R/O	BIN	1	AP Alarm Code Bit 6 – Point Fail Bit 2 – High Alarm Bit 0 – Low Alarm Bit 7, 5, 4, 3, 1 – Not Used	108	43	Full
42	R/W	FLP	4	AP Low Alarm	108	37	Full
43	R/W	FLP	4	AP High Alarm	108	38	Full
44	R/W	FLP	4	AP Deadband	108	39	Full
45	R/W	FLP	4	AP Alarm Fault Value	108	36	Full

Point Type 40: Multi-Variable Sensor

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
46	R/W	FLP	4	PT Mode Bit 7 – Not Used Bit 6 – RBX on Set 0 = Disable 1 = Enable Bit 5 – RBX on Clear 0 = Disable 1 = Enable Bit 4 – Alarm Enable 0 = Disable Alarm 1 = Enable Alarm Bit 1 through 3 – Not Used Bit 0 – Sensor Alarms 0 = Disable Alarm 1 = Enable Alarm	108	55, 56, 57	Partial – No support for bit 0
47	R/O	BIN	1	PT Alarm Code Bit 6 – Point Fail Bit 2 – High Alarm Bit 0 – Low Alarm Bit 7, 5, 4, 3, 1 – Not Used	108	58	Full
48	R/W	FLP	4	PT Low Alarm	108	52	Full
49	R/W	FLP	4	PT High Alarm	108	53	Full
50	R/W	FLP	4	PT Deadband	108	54	Full
51	R/W	FLP	4	PT Alarm Fault Value	108	51	Full

4.2.17 Point Type 41: Run Parameters (#1)

Point Type 41: Run Parameters (#1)

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	113/115	0/0	Partial – The event for a change to this parameter references point type 7
1	R/W	FLP	4	Atmospheric Pressure	112	16	Full
2	R/W	BIN	1	Calculation Method II	NA	NA	None – returns 0
				Bits 5 to 7 – Not used			
				Bit 4 – BTU Dry or Wet Override 0 = See Bit 3 1 = BTU as Delivered	112	21	Full
				Bit 3 – BTU Dry or Wet 0 = BTU Dry 1 = BTU Wet	112	21	Full
				Bit 2 – Calculated or Manual Value 0 = Calculated 1 = Enter Atmospheric Pressure – AGA 1992	112	15	Full
				Bit 1 – Gross Method 0 = Gross Method II 1 = Gross Method I	112	3	Full
				Bit 0 – Detail Level 0 = Detailed Method 1 = Gross Method	112	3	Full
3	R/O	TLP	3	Not Used	NA	NA	None – returns 0
4	R/W	FLP	4	Pipe Reference	113	13	Full
5	R/W	UINT8	1	Pipe Material – AGA 1992	113	14	Full
6	R/O	UINT8	1	Not Used	NA	NA	None – returns 0
7	R/O	FLP	4	Fb – AGA 1985, Cd – AGA 1992, Ftm – Turbine	114/116	5/5	Full

Point Type 41: Run Parameters (#1)

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
8	R/O	FLP	4	Fr – AGA 1985, Reynolds Number – AGA 1992	114/116	16/NA	Full
9	R/O	FLP	4	Y – Expansion Factor – Orifice, Fpm – Turbine	114/116	7/4	Full
10	R/O	FLP	4	Fpb Factor	114/116	10/NA	Full
11	R/O	FLP	4	Ftb Factor	114/116	11/NA	Full
12	R/O	FLP	4	Ftf Factor	NA	NA	None – returns 0
13	R/O	FLP	4	Fgr Factor	114/116	18/11	Full
14	R/O	FLP	4	Fpv – Super-compressibility Factor	114/116	9/7	Full
15	R/O	UINT8	1	History Point 1	NA		None – returns 0
16		UINT8	1	RollUp	NA		None – returns 0
17		FLP	3	TLP	NA		None – returns 0
18		FLP	4	Conversion	NA		None – returns 0
19 to 78: Same as 15 to 18, History points 2 to 16					NA		None – returns 0

4.2.18 Point Type 42: Run Parameters (#2)

Point Type 42: Run Parameters (#2)

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
0	R/W	AC	10	Point Tag Identification	113/115	0/0	Full
1	R/O	FLP	4	Flow Today	114/116	19/12	Full
2	R/O	FLP	4	Flow Yesterday	114/116	20/13	Full
3	R/O	FLP	4	Flow Month	114/116	21/14	Full
4	R/O	FLP	4	Flow Previous Month	114/116	22/15	Full
5	R/O	FLP	4	Flow Accumulated	114/116	23/16	Full
6	R/O	FLP	4	Minutes Today	114/116	24/17	Full
7	R/O	FLP	4	Minutes Yesterday	114/116	25/18	Full
8	R/O	FLP	4	Minutes Month	114/116	26/19	Full
9	R/O	FLP	4	Minutes Previous Month	114/116	27/20	Full
10	R/O	FLP	4	Minutes Accumulated	114/116	28/21	Full
11	R/O	FLP	4	Energy Today	114/116	29/22	Full
12	R/O	FLP	4	Energy Yesterday	114/116	30/23	Full
13	R/O	FLP	4	Energy Month	114/116	31/24	Full
14	R/O	FLP	4	Energy Previous Month	114/116	32/25	Full
15	R/W	FLP	4	Energy Accumulated	114/116	33/26	Full
16	R/W	FLP	4	Uncorrected Today	116	27	Full
17	R/W	FLP	4	Uncorrected Yesterday	116	28	Full
18	R/W	FLP	4	Uncorrected Month	116	29	Full
19	R/W	FLP	4	Uncorrected Previous Month	116	30	Full
20	R/W	FLP	4	Uncorrected Accumulated	116	31	Full
21	R/O	FLP	4	Orifice Plate Bore Diameter	116	8	Full
22	R/O	FLP	4	Meter Type (Pipe) Internal Diameter	114	13	Full
23	R/O	FLP	4	Beta – Diameter Ratio	114	14	Full

Point Type 42: Run Parameters (#2)

Parm #	Read-Write	Data Type	Length	Description	ROC800 Point Type	ROC800 Parameter	Support
24	R/O	FLP	4	Ev (Velocity of approach)	114	6	Full
25	R/O	FLP	4	Cd (Coefficient of discharge)	114	5	Full
26	R/O	FLP	4	Reynolds Number	114	16	Full
27	R/O	FLP	4	Upstream Static Pressure	114	17	Full
28	R/O	FLP	4	Molecular Weight	NA		None – returns 0

4.3 User Defined Point Type 69/76: Protocol Emulation Program Configuration

Point type 69/76 is the protocol emulation configuration and accumulation point type. The program maintains one instance of this point type, and saves point type 69/76 to internal configuration memory.

Point Type 69/76: Protocol Emulation Program Configuration

Parm #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
0	Port #1	R/O	System	STRING 20	20		Default Tag	1.00	Identifies Comm Port #1 on the ROC800-SERIES.
1	Port #2	R/O	System	STRING 20	20		Default Tag	1.00	Identifies Comm Port #2 on the ROC800-SERIES. Comm Port #2 is not used.
2	Port #3	R/O	System	STRING 20	20		Default Tag	1.00	Identifies Comm Port #3 on the ROC800-SERIES.
3	Port #4	R/O	System	STRING 20	20		Default Tag	1.00	Identifies Comm Port #4 on the ROC800-SERIES.
4	Port #5	R/O	System	STRING 20	20		Default Tag	1.00	Identifies Comm Port #5 on the ROC800-SERIES.
5	Port #6	R/O	System	STRING 20	20		Default Tag	1.00	Identifies Comm Port #6 on the ROC800-SERIES.
6	Protocol Converter on Port #1	R/W	User	UINT8	1	0,1	0	1.00	Enables the program on Comm Port #1.
7	Protocol Converter on Port #2	R/W	User	UINT8	1	0,1	0	1.00	Not used.
8	Protocol Converter on Port #3	R/W	User	UINT8	1	0,1	0	1.00	Enables the program on Comms Port #3.
9	Protocol Converter on Port #4	R/W	User	UINT8	1	0,1	0	1.00	Enables the program on Comm Port #4.
10	Protocol Converter on Port #5	R/W	User	UINT8	1	0,1	0	1.00	Enables the program on Comm Port #5.
11	Protocol Converter on Port #6	R/W	User	UINT8	1	0,1	0	1.00	Enables the program on Comm Port #6.

Point Type 69/76: Protocol Emulation Program Configuration

12	Alarm Log Last 240	R/W	User	UINT8	1	0,1	0	1.00	Determines how many alarm entries are sent and whether filtered for non-ROC protocol equivalents. 0 = 240 1 = 450
13	Event Log Last 240	R/W	User	UINT8	1	0,1	0	1.00	Determines how many alarm entries are sent and whether filtered for non-ROC protocol equivalents. 0 = 240 1 = 450
14	IO Addressing	R/W	User	UINT8	1	0,1	0	1.23	Determines the number of points used per module. 0 = Always use 16 points per module. 1 = Use 8 or 16 points per module (according to System parameter 50).

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If you have comments or questions regarding this manual, please direct them to your local sales representative or contact:

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